



Australian Government

AURHTL101 Inspect, diagnose and repair alternative fuel systems in heavy vehicle engines

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Application

This unit describes the skills and knowledge required to inspect, diagnose and repair alternative fuel systems in heavy vehicle engines. The unit involves preparing for the task, inspecting the system, developing a diagnostic testing strategy, diagnosing the cause of the fault, carrying out the repair, performing post-repair testing, and completing workplace processes and documentation.

The unit applies to those who work on the alternative fuel systems of agricultural machinery, heavy commercial vehicles, marine vessels or mobile plant machinery.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Unit Sector

Mechanical – Heavy Vehicle Technical – Alternative Fuels

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to inspect alternative fuel system	1.1 Identify job requirements from workplace instructions 1.2 Obtain and interpret servicing information 1.3 Identify hazards associated with the work, assess potential risks and implement control measures in line with workplace policies and procedures 1.4 Identify tools and equipment required for servicing activity and establish serviceability according to workplace procedures

ELEMENT	PERFORMANCE CRITERIA
2. Inspect fuel system	2.1 Carry out inspection according to manufacturer specifications, workplace procedures, workplace health and safety and environmental requirements 2.2 Compare inspection results with manufacturer specifications 2.3 Report inspection findings according to workplace procedures
3. Prepare to diagnose and repair fuel system	3.1 Identify required information for diagnosis activity 3.2 Analyse diagnostic options and develop testing strategy to identify cause of fault using workplace and manufacturer procedures 3.3 Identify hazards and environmental issues associated with diagnose and repair activity, assess potential risks and implement control measures in line with workplace policies and procedures 3.4 Identify tools and equipment required for testing strategy and establish serviceability according to workplace procedures
4. Diagnose fuel system	4.1 Implement diagnostic tests set out in testing strategy according to manufacturer and workplace procedures, and workplace health and safety requirements 4.2 Identify cause of fault through analysis of diagnostic test results. 4.3 Confirm and report cause of fault according to workplace procedures 4.4 Develop and report recommendations for necessary repairs according to workplace procedures
5. Repair fuel system	5.1 Identify required information for repair activity 5.2 Identify tools, equipment and materials required for repair activity and establish serviceability according to workplace procedures 5.3 Carry out repairs according to workplace and manufacturer procedures, manufacturer specifications, workplace health and safety and environmental requirements 5.4 Carry out post-repair testing according to workplace procedures, workplace health and safety and environmental requirements
6. Complete work processes	6.1 Conduct final inspection according to workplace procedures and confirm vehicle is ready for use 6.2 Clear work area and dispose of or recycle materials according to workplace procedures 6.3 Complete documentation according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Learning	• Locates required sources of information efficiently • Develops a sequenced plan for a specific task
Reading	• Organises and interprets technical information from workplace procedures, manufacturer procedures and manufacturer specifications
Oral communication	• Clarifies instructions • Obtains information from customers and supervisors
Numeracy	• Measures alternative fuel system components • Uses mathematical operations, including addition, subtraction and multiplication • Calculates distances, areas, volumes and tolerances • Calculates deviations from manufacturer specifications
Planning and organising	• Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes
Technology	• Uses precision measuring equipment and diagnostic equipment

Unit Mapping Information

Supersedes and is equivalent to AURHTL001 Inspect, diagnose and repair alternative fuel systems for heavy vehicle engines.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURHTL101 Inspect, diagnose and repair alternative fuel systems in heavy vehicle engines

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- inspect, diagnose and repair alternative fuel systems in two different heavy vehicle engines.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to diagnose and repair alternative fuel systems in heavy vehicle engines, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair alternative fuel systems in heavy vehicle engines, including:
 - establishing serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment
 - disposal of excess materials
 - recycling procedures
- workplace health and safety (WHS) requirements relating to inspecting, diagnosing and repairing alternative fuel systems, including procedures for:
 - working with alternative fuel systems
 - selecting and using personal protective equipment (PPE)

- environmental requirements relating to inspecting, diagnosing and repairing alternative fuel systems, including procedures for preventing fuel leakage from fuel systems
- operating principles of alternative fuel systems
- application and function of alternative fuel systems
- inspect and repair procedures for alternative fuel systems
- diagnostic testing procedures for alternative fuel systems
- post-repair testing procedures for alternative fuel systems.

Assessment Conditions

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the alternative fuel systems that they have inspected and repaired, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer alternative fuel system specifications
- two different heavy vehicle engines with alternative fuel systems requiring repair
- diagnostic equipment for alternative fuel systems, including exhaust gas analyser
- repair tools, equipment and materials for alternative fuel systems in heavy vehicle engines.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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